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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,241	02/27/2002	Li Hao	2250.09US01	2030

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EXAMINER

LU, JIA

ART UNIT PAPER NUMBER

2611

DATE MAILED: 08/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/084,241	Applicant(s) HAO ET AL.	
	Examiner Jia W. Lu	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2006.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1. Claims 1-4, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,088,347, in view of patent 5,950,124.
  - a. Regarding claim 1, 3, 4, 9-13, patent '347 discloses a two-level variable chip rate CDMA system (column 4, line 3-5) comprising a transmitter applying a first and a second level spreading to the data information, where each spreading gain is the respective length of the spreading code (column 4, line 5-19). While '347 does not disclose either first or second level spreading codes to be dynamically variable, such a technique is well known in the arts (see patent '124 abstract). It would have been obvious to one ordinarily skilled in the art to use dynamically variable chip rates in either or both first and second level spreading codes described in patent '347 to provide an improved data transmission rate (patent '124, column 5, lines 15-30). Although the respective receiver (fig. 1, element 13) detail is

not shown, it is obvious that the receiver for a two-level CDMA system must decode in a way that reverses the transmitting process. Thus it is obvious that the second level spreading be despread before the first level spreading is despread. The process of integration over a chip width in the course of despreading in a receiver is inherent. Therefore, it would have been obvious for one ordinarily skilled in the art to include a receiver system that operates in a way that reverses the spreading process in the transmitter disclosed in patent '347, in order to systematically despread the various spreading codes.

- b. Regarding claim 2, patent '347 shows each gain of the spreading system to be the length of each spreading code (column 4, 11-12), and the total gain of the two-level spreading system to be the combination of the two gains (column 4, line 5). Note that the combination technique used in patent '347 (column 2, line 46) represents multiplication (column 2, lines 29-34).
- c. Regarding claim 10, patent '347 shows the signal to have a length  $x$  (figure 13,  $c[n]$ ), applying first level spreading having length  $x*y$  (figure 13,  $d[n]$ ), and applying second level spreading having length  $x*y*z$  (figure 13,  $v[n]$ ).
- d. Regarding claims 11 and 13, '347 describes dynamically varying the code lengths (column 4).

2. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,088,347 and 5,950,124 as applied to claims 1, 3 and 4 above, further in view of PCT application WO 00/5,950,12445530.
  - a. Regarding claim 5, although patent '347 does not teach the use of ZCZ sequences to be used in a two-level CDMA system, the use of ZCZ, including where  $ZCZ=1$ , has already been thoroughly disclosed by applicant in application '530 to be used in spreading and despreading functions in CDMA systems (page 16, line 1 to page 17, line 3). It would have been obvious for one ordinarily skilled in the art to use ZCZ as a common code in spreading and despreading to reduce common channel interference and allow flexible width adjustments.
  - b. Regarding claims 6-8, patent '347 teaches the use of Walsh code as a common code (column 6, line 68), orthogonal sequence as a channel code (column 6, line 68), and PN code as a common code (column 4, line 6). While the patent does not disclose the use of ZCZ as either code, application '530 teaches the use of ZCZ (including  $ZCZ=1$ ) as both common code and channel code (page 16, line 1 to page 17, line 3). The reason to combine is stated above in part a.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jia W. Lu whose telephone number is 571-272-6042. The examiner can normally be reached on Mon- Fri, 10:30AM-6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571)272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jia Lu  
Examiner

  
CHIEH M. FAN  
SUPERVISORY PATENT EXAMINER